

Textbox A.3.1. The sample probable questions from the LLM models.

Type-1: Activity -

- What physical activities have you engaged in today?
- How would you rate your energy levels after your morning workout?
- Did you achieve your step count or exercise target for the day?
- Have you incorporated any stretching exercises into your routine?
- What was the most challenging aspect of your workout today?
- Describe a physical activity you enjoyed the most this week.
- Are you planning to try a new workout routine or activity?
- How many hours did you spend being physically active today?
- What motivates you the most to exercise regularly?
- Have you noticed any improvements in your physical strength this week?
- Any specific fitness goals you've set for the upcoming week?
- How important do you consider consistency in your exercise regimen?
- What obstacles did you face in being physically active this week?
- Share a small achievement or progress in your fitness journey.
- Any exercise you're planning to challenge yourself with?
- How do you feel after a long walk or jog?
- How do you plan to incorporate more movement into your daily routine?
- Describe a physical activity you found surprisingly enjoyable.
- How do you manage to stay active during a busy day?
- Have you noticed any positive changes in your body after exercising this week?

Type-2: Sleep -

- What time did you go to bed and wake up today?
- Rate the quality of your sleep on a scale from 1 to 10.
- Did you feel well-rested when you woke up this morning?
- How many hours of deep sleep did you achieve last night?
- Any specific factors affecting your sleep quality this week?
- Share any sleep improvement techniques you've tried recently.
- Describe a bedtime routine that relaxes you the most.
- What's your opinion on the impact of sleep on overall well-being?
- Are you struggling with any sleep-related challenge?
- How often do you have trouble in falling asleep?
- Share your thoughts on napping and its impact on your day.
- Any changes in your sleep pattern noticed in the last few days?
- What helps you wind down before bedtime?
- Are you looking to change your sleep schedule for better sleep quality?
- Share any breakthrough in achieving a good night's sleep.
- Do you practice any meditation or relaxation techniques before bed?
- How has your sleep quality affected your day's productivity?
- Describe a time when you felt most refreshed after a good night's sleep.
- Rate your overall sleep satisfaction level for this week.
- Any sleep goal you aim to achieve in the upcoming week?

Type-3: Diet -

- Share details about your meals today. How nutritious were they?
- Did you try any new healthy recipe or food this week?
- How many servings of fruits and vegetables did you have today?
- Describe a balanced meal you enjoyed eating this week.

- Are you satisfied with your current dietary choices?
- Any challenge you faced in maintaining a healthy diet?
- Rate your water intake today. How well did you hydrate?
- Have you managed to control your portion sizes recently?
- Share your thoughts on balanced eating and its benefits.
- Are you noticing any positive changes in your eating habits?
- What's your take on managing cravings and temptations?
- Any food group you wish to include more in your diet?
- Describe your post-meal feeling after a nutritious meal.
- Have you faced any difficulties in staying consistent with healthy eating?
- How do you plan to incorporate more variety into your diet?
- Share any specific dietary goal or challenge you've set for the week.
- Any new habit you're trying to adopt to improve your eating habits?
- Are you satisfied with your current snacking choices?
- How do you balance a treat with maintaining a healthy diet?
- What nutritional changes do you aim to introduce in your diet next week?

Type-4: Habits -

- Have you successfully adhered to your habit formation plan today?
- Are there any rewards you associate with sticking to a habit?
- Share any strategies you use for habit tracking or reinforcement.
- What is the most rewarding habit you've developed recently?
- Any habits you're planning to improve or change for betterment?
- How important do you think consistency is for habit development?
- Share a habit you found surprisingly easy to stick to.
- Describe the feeling of accomplishment after maintaining a habit.
- Any challenges you've encountered in keeping up with a new habit?
- Are you noticing any positive changes or outcomes from your habits?
- How do you plan to stay motivated for long-term habit development?
- Share any tips or tricks for successfully establishing a habit.
- How do you monitor progress and improvement in your habits?
- Rate your satisfaction level with your current habit-forming journey.
- Share your thoughts on habit stacking and its impact on consistency.
- Describe a habit that significantly improved your day today.
- Any specific habit you're determined to establish next week?
- What was the most beneficial aspect of practicing a habit?
- What advice would you give to someone aiming to develop a new habit?

Textbox A.3.2. The sample probable conversations under each category in text to ChatGPT for a week for personalized behavior optimization (activity, sleep, diet, and habit) and goal management using the chatbot eCoach system.

Type-1: Activity -

- Exercise Routine Check-in: "How did your workout go today? Any achievements you'd like to share?"
- Fitness Goal Review: "Have you set specific fitness goals for the week? Let's track your progress together."
- New Exercise Exploration: "Thinking about trying a new exercise or sport? Let's discuss and plan it out!"
- Energy Levels and Activity: "How's your energy level after today's activities? Feeling motivated?"
- Overcoming Challenges: "Did you encounter any obstacles in staying active today? Let's strategize to overcome them."
- Activity Exploration: "Looking for diverse physical activities? I can suggest a few for you to try!"
- Consistency in Exercise: "Maintaining a consistent workout routine is key. How can I support you in that?"
- Recovery and Rest Days: "Rest days are crucial. How do you plan to recover or relax after intense workouts?"
- Activity Tracking: "Let's review your weekly activity log. Any trends or areas to focus on?"
- Physical Activity Motivation: "Need motivation? Let's discuss what drives you to stay active!"

Type-2: Sleep -

- Sleep Quality Check: "How well did you sleep last night? Any changes in your sleeping pattern?"
- Bedtime Relaxation Techniques: "Share your favorite bedtime relaxation routines that help you sleep better."
- Sleep Satisfaction Review: "Rate your sleep satisfaction this week. Any issues I can assist with?"
- Sleep Schedule Adjustments: "Considering changes to your sleep schedule? Let's talk about that."
- Overcoming Sleep Challenges: "Struggling with sleep? Let's find solutions to improve your rest."
- Napping Habits: "How often do you nap, and how does it affect your daily routine?"
- Maintaining a Sleep Diary: "Keeping track of your sleep patterns. What have you noticed lately?"
- Evolving Sleep Environment: "Have you made changes to your sleep environment for better rest?"
- Relaxation Before Bed: "Discuss any relaxation or meditation practices you use before sleeping."
- Understanding Sleep Impact: "The link between quality sleep and better health. How do you see it?"

Type-3: Diet -

- Daily Nutritional Intake: "What did your meals look like today? Any nutrient-rich additions?"
- Healthy Meal Preparation: "How's your commitment to healthy meals? Share any challenges faced."
- New Nutrition Goals: "Considering new dietary goals? Let's explore and define them together."
- Meal Portion Control: "How are you managing portion sizes in your meals? Any difficulties?"
- Hydration Habits: "Rate your water intake today. Tips for staying well-hydrated?"
- Navigating Cravings: "Craving something specific? Let's discuss healthy substitutes."
- Daily Snacking Choices: "Share today's snacking choices. Are they aligned with your goals?"
- Balanced Diet Satisfaction: "Are you content with your balanced eating habits this week?"
- Mealtime Satisfaction: "Discuss how your meal satisfaction impacts your day."
- Weekly Nutritional Changes: "Reflect on changes in your eating habits this week."

Type-4: Habits -

- Habit Tracking Update: "How are your habits shaping up this week? Any observations or challenges?"
- Habit Development Challenges: "Struggling to maintain a habit? Let's find solutions together."
- Positive Habit Reinforcement: "Celebrate a recently achieved habit milestone. Share your joy!"
- Habit Development Strategies: "Looking to build a new habit? Let's plan for its success."
- Tracking Progress: "Reviewing your habit progress. What have you accomplished?"
- Overcoming Habit Challenges: "Overcame a tough challenge in forming a new habit? Share your experience."
- Habit Consistency: "Maintaining consistency in habits is vital. How can I assist you?"
- New Habit Exploration: "Curious about new habits to form? Let's brainstorm together."
- Habit Stack Insights: "Thoughts on habit stacking for consistency and routine?"
- Habit Progress Evaluation: "Reflect on how your habits are impacting your lifestyle."

